

Case 2590

***Dacus parallelus* Wiedemann, 1830 (currently *Anastrepha parallela*; Insecta, Diptera): proposed replacement of lectotype**

Allen L. Norrbom

Systematic Entomology Laboratory, USDA, c/o National Museum of Natural History, NHB 168, Washington, D.C. 20560, U.S.A.

Abstract. The purpose of this application is the replacement of the lectotype designation by Hardy (1968) for the fruit fly *Dacus parallelus* Wiedemann, 1830. The male syntype chosen by Hardy cannot be determined as to species, but it is not that traditionally called *parallelus*. To conserve usage it is requested that the female lectotype chosen later by Zucchi (1979) be made the valid designation.

1. The name *parallelus* Wiedemann, 1830 (p. 515), originally proposed in the genus *Dacus* Fabricius, has been used for a species of *Anastrepha* Schiner, [1868] (p. 263) for over a century. Although the type series of *parallelus* includes specimens of this *Anastrepha* species, the male syntype designated as the lectotype by Hardy (1968, p. 145) is of a different *Anastrepha* species belonging to a complex in which the males are not distinguishable. If Hardy's designation is allowed to stand, a new name must be proposed for the species traditionally known as *Anastrepha parallela* (Wiedemann), and the identity of *parallelus* will remain unclear.

2. The original description of *parallelus* was based on an unstated number of specimens of both sexes from 'Brasilía', which Wiedemann said were in 'meiner Sammlung' (his personal collection), in the Winthem Collection, and in the 'Frankfurt Museum' (the Senckenberg Museum). I have examined four putative syntypes in the Naturhistorisches Museum, Wien (NMW) and one in the U.S. National Museum of Natural History, all originally from the Wiedemann or Winthem Collections, and a specimen each in the Loew Collection, Zoologisches Museum, Berlin and the Hering Collection in the British Museum (Natural History), London, that may be syntypes that Loew took from the Senckenberg Museum. There may also be additional syntypes remaining in the Senckenberg Museum, but only the male and female specimens designated as lectotype by Hardy and Zucchi (1979; see below), respectively, directly affect the status of the name *parallelus* and will be discussed here.

3. Both specimens designated as lectotype are in the NMW and both have labels with at least 'parallelus' and 'Brasilía' in Wiedemann's writing (verified by Dr R. Contreras-Lichtenberg, curator of the NMW Diptera collection). In addition to Hardy's lectotype label and Zucchi's paralectotype label, the male also has a small square with '68' and a label with 'parallelus' in unknown handwriting and 'Coll. Wied.' in machine printing. The female also has Zucchi's lectotype label, a small square with '62', a label with 'Brasilía' in Winthem's writing, a red 'TYPE' label (added by later NMW workers), and a label with 'parallelus' in unknown writing (the same label as on the male) and 'Coll. Winthem' in machine printing. This last label and the 'Coll.

Wiedem.' label on the male were added by museum workers when the Wiedemann and Winthem Diptera collections were incorporated into the NMW general collection (see Brauer, 1880, pp. 105–106).

4. Both specimens designated as lectotype are in good condition except for some missing macrosetae. One wing is broken and one antenna is missing on the male and both first flagellomeres are gone in the female. Both agree with the original description of *parallelus*, which fits many *Anastrepha* species, and neither can be eliminated as a valid type on this basis. The male designated by Hardy belongs to the *Anastrepha chichlayae* group, a complex including at least eight nominal species (Norrbom, 1985, p. 274). Males of this group cannot be identified as to species (Stone, 1942, p. 41; Steyskal, 1977, p. 11 & 20) and so it is not possible to determine if Hardy's lectotype is conspecific with the types of any of these nominal species. The female designated as lectotype by Zucchi and all of the other putative syntypes examined (except a female designated as the holotype of *Anastrepha zernyi* Lima, 1934 (p. 525)) are the species of *Anastrepha* which traditionally has been called *parallela* (Wiedemann). Both males and females of this species can be distinguished from all other *Anastrepha* species.

5. After Wiedemann, Loew (1862, pp. 51 & 71) was the first to use the name *parallela*, including it in the genus *Trypeta* Meigen, 1803. Based on a reexamination of the Wiedemann type material in both the NMW and the Senckenberg Collection, Loew (1873, pp. 228–229 & 231) later redescribed *parallela*, including it in the genus *Acrotoxa* Loew, 1873, which is now considered a junior synonym of *Anastrepha*. Loew's description included mention of strong bends in wing vein R_{2+3} , a character found in the species including the female syntype designated as lectotype by Zucchi, but not in any of the species of the *chichlayae* group. Subsequent to Loew (1873, p. 229), the name has generally been applied to the former species (a representative list of usage is held by the Commission Secretariat).

6. Hardy (1968, p. 145) examined only 'two cotypes, one male, one female' in the NMW. From his lectotype label, the identity of the male is clear. From his mention that 'the antennae are broken in the female' he also apparently saw the female later designated by Zucchi as lectotype. Hardy mistakenly believed that the female specimen was the holotype of *Anastrepha zernyi* Lima (a fact he restated under the heading for *zernyi* (Hardy, 1968, p. 148)) and he therefore designated the male as lectotype of *parallelus*. The real holotype of *zernyi* (which has one antenna intact) and the other male syntype in the NMW apparently were overlooked. In designating the male as lectotype, Hardy apparently was unaware that it is not the species that traditionally has been called *parallela*.

7. Zucchi (1979, p. 263) examined all four *parallelus* syntypes in the NMW. He did not state that the male designated as lectotype by Hardy was not the species traditionally called *parallela*, but his description of the specimens implies this. Although he was aware of Hardy's lectotype label, Zucchi made a second lectotype designation, selecting the female syntype, which he clearly recognised as the species traditionally known as *parallela*. Zucchi stated that he thought Hardy's designation was unpublished and invalid but this is incorrect.

8. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to set aside all lectotype designations made for the nominal species *Dacus parallelus* Wiedemann, 1830 prior to that of Zucchi, (1979);

- (2) to place on the Official List of Specific Names in Zoology the name *parallelus* Wiedemann, 1830, as published in the binomen *Dacus parallelus* (and as interpreted by the lectotype designated by Zucchi (1979).

Acknowledgements

R. A. Zucchi, Universidade de São Paulo, Piracicaba, Brazil and D. E. Hardy, University of Hawaii, reviewed and support this proposal. I thank them and F. C. Thompson and R. E. White, of this Laboratory, for their comments on previous drafts of the manuscript.

References

- Brauer, F. 1880. Die Zweiflügler des Kaiserlichen Museum zu Wien, vol. 1. *Denkschriften der Kaiserlichen Akademie der Wissenschaften. Wien. Mathematische-Naturwissenschaften Classe*, **42**: 105–216.
- Hardy, D. E. 1968. The fruit fly types in the Naturhistorisches Museum, Wien (Tephritidae-Diptera). *Annalen des (K.K.) Naturhistorischen (Hof.) Museums. Wien*, **72**: 107–155.
- Lima, A. da Costa 1934. Moscas de frutas do genero *Anastrepha* Schiner, 1868 (Diptera: Trypetidae). *Memorias do Instituto Oswaldo Cruz*, **28**: 487–575.
- Loew, H. 1862. Monographs of the Diptera of North America. I. *Smithsonian Miscellaneous Collection*, **6** (141): 1–221.
- Loew, H. 1873. Monographs of the Diptera of North America III. *Smithsonian Miscellaneous Collection*, **11** (256): 1–351.
- Norrbom, A. L. 1985. *Phylogenetic analysis and taxonomy of the cryptostrepha, daciformis, robusta and schausi species groups of Anastrepha Schiner (Diptera: Tephritidae)*. Ph.D. dissertation, The Pennsylvania State University, University Park, Philadelphia.
- Schiner, J. R. [1868]. *Reise der Österreichischen fregatte Novara um die Erde (Zoologischer Theil), Diptera*, 388 pp.
- Steyskal, G. C. 1977. *Pictorial key to species of the genus Anastrepha (Diptera: Tephritidae)*. 35 pp. Entomological Society of Washington, Washington, D.C.
- Stone, A. 1942. The fruitflies of the genus *Anastrepha*. *Miscellaneous Publications. United States Department of Agriculture*, **439**: 1–112.
- Wiedemann, C. R. W. 1830. *Aussereuropäische zweiflügelige Insekten*. Vol. 2, 684 pp. Hamm.
- Zucchi, R. A. 1979. Sobre os tipos de *Anastrepha parallela* (Wied., 1830), de *A. striata* Schiner, 1868 e de *A. zernyi* Lima, 1934 (Diptera, Tephritidae). *Revista Brasileira de Entomologia* **23**: 263–266.